## In the Claims

The following listing of the claims replaces all previous listings.

Listing of the Claims

1. (Currently Amended) A method of analyzing a polynucleotide using matrix assisted laser desorption/ionization mass spectrometry, the method comprising

a) obtaining the polynucleotide bound to a substrate via a linker moiety, the linker moiety comprising a triaryl methyl linker group wherein the polynucleotide is bound to a substrate via the triaryl methyl linker group;

b) contacting the substrate and the polynucleotide bound to the substrate with a matrix material; ~~and~~

c) inserting the substrate and the matrix embedded polynucleotide on the substrate into the matrix assisted laser absorption/ionization source; and

d) analyzing the polynucleotide by matrix assisted laser desorption/ionization mass spectrometry.

2. (Original) The method of claim 1, wherein obtaining the polynucleotide bound to the substrate via a linker moiety comprises synthesizing the polynucleotide on the substrate.

3. (Original) The method of claim 2, wherein synthesizing the polynucleotide on the substrate comprises providing a functionalized substrate having a nucleotide monomer bound to the substrate via the triaryl methyl linker group, and then synthesizing the polynucleotide using the nucleotide monomer bound to the substrate as a starting point for synthesizing the polynucleotide such that the resulting polynucleotide is bound to the substrate via the triaryl methyl linker group.

4. (Withdrawn) The method of claim 1, wherein obtaining the polynucleotide bound to the substrate via a linker moiety comprises procuring the polynucleotide in solution and contacting the polynucleotide in solution with a functionalized substrate to result in the polynucleotide bound to the substrate via the triaryl methyl linker group.

5. (Withdrawn) The method of claim 4, wherein the triaryl methyl linker group is bound to the functionalized substrate prior to contacting the polynucleotide in solution with the functionalized substrate.

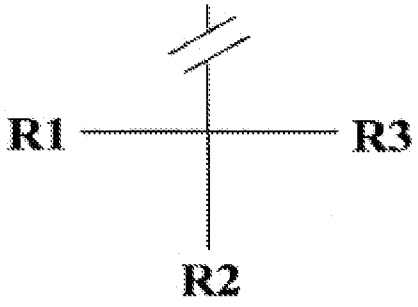
6. (Withdrawn) The method of claim 4, wherein the triaryl methyl linker group is bound to the polynucleotide in solution prior to contacting the polynucleotide in solution with the functionalized substrate.

7. The method of claim 1, wherein the triaryl methyl linker group is covalently bound to the polynucleotide directly or via an intermediate linking group.

8. (Original) The method of claim 1, wherein analyzing the polynucleotide comprises directing laser radiation at the matrix material to generate ions including ions derived from the polynucleotide, and analyzing the ions in a mass spectrometer to provide information about the polynucleotide.

9. (Original) The method of claim 1, wherein the substrate is a mass spectrometer sample plate adapted to be disposed in operational relationship to a mass spectrometer to allow matrix assisted laser desorption/ionization analysis of the polynucleotide.

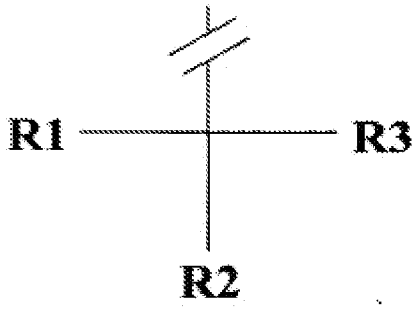
10. (Original) The method of claim 1, wherein the triaryl methyl linker group has the structure (II)




(II)

wherein the broken line represents a bond via which the triaryl methyl linker group is connected to the polynucleotide, and R1, R2, and R3 are independently selected from substituted or unsubstituted aryl groups, provided that one of R1, R2, and R3 is substituted by being bonded to the substrate.

11. (Original) The method of claim 1, wherein the triaryl methyl linker group has the structure (II)




(II)

wherein the broken line represents a bond via which the triaryl methyl linker group is connected to the substrate, and R1, R2, and R3 are independently selected from substituted or unsubstituted aryl groups, provided that one of R1, R2, and R3 is substituted by being bonded to the polynucleotide.

12. (Currently amended) A method of analyzing a polynucleotide using matrix assisted laser desorption/ionization mass spectrometry, the method comprising

a) obtaining a composition having the structure (I)

●—Cgp—Trl—Cgp`—Pnt (I)

wherein the groups are defined as follows:

●— is a substrate,

Trl is a triaryl methyl linker group having three aryl groups, each bound to a central methyl carbon, at least one of said three aryl groups having one or more substituents,

Cgp is a linking group linking the substrate and the triaryl methyl linker group, or is a bond linking the substrate and the triaryl methyl linker group,

Pnt is a polynucleotide, and

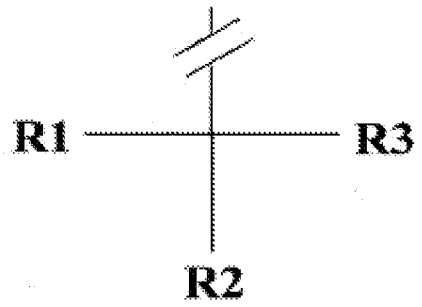
Cgp' is a linking group linking the polynucleotide and the triaryl methyl linker group, or is a bond linking the polynucleotide and the triaryl methyl linker group.

b) contacting the substrate and the composition having the structure (I) with a matrix material; ~~and~~

c) inserting the substrate and the matrix embedded composition on the substrate into the matrix assisted laser absorption/ionization source; and

d) analyzing the polynucleotide by matrix assisted laser desorption/ionization mass spectrometry.

13. (Original) The method of claim 12, wherein the triaryl methyl linker group has the structure (II)




(II)

wherein the central methyl carbon is directly covalently bound to R1, R2, and R3, wherein R1, R2, and R3 are independently selected from substituted or unsubstituted aryl groups, provided that one of R1, R2, or R3 is substituted by being bound to one of the group consisting of the substrate and the polynucleotide.

14. (Original) The method of claim 13, wherein the broken line represents a bond via which the central methyl carbon is connected to the substrate, and the central methyl carbon is connected to the polynucleotide via one of R1, R2, or R3.

15. (Original) The method of claim 13, wherein the broken line represents a bond via which the central methyl carbon is connected to the polynucleotide, and the central methyl carbon is connected to the substrate via one of R1, R2, or R3.
(Original) The method of claim 13, wherein R1, R2, and R3 are independently selected from substituted phenyl and unsubstituted phenyl.

17. (Original) The method of claim 13, wherein R1, R2, and R3 are optionally substituted aryl groups independently selected from phenyl, biphenyl, naphthanyl, indolyl, pyridinyl, pyrrolyl, thiophenyl, furanyl, annulenyl, quinolinyl, and anthracenyl.

18. (Withdrawn) The method of claim 17, wherein at least one of R1, R2, and R3 is selected from naphthanyl, indolyl, pyridinyl, pyrrolyl, thiophenyl, furanyl, annulenyl, quinolinyl, and anthracenyl.

19. (Original) The method of claim 13, wherein R1, R2, and R3 are independently selected from phenyl, methoxyphenyl, dimethoxyphenyl, trimethoxyphenyl, and furanyl.

20. (Original) The method of claim 12, wherein the linking groups denoted Cgp and Cgp' are independently selected from

(1) a lower alkyl group;

(2) a modified lower alkyl group in which one or more linkages selected from ether-, oxo-, thio-, amino-, phospho-, silyloxi, is present;

(3) a substituted lower alkyl group having one or more additional groups including lower alkyl, aryl, aralkyl, alkoxyl, thioalkyl, hydroxyl, amino, sulfonyl, halo; and

(4) a modified lower alkyl having (4a) one or more linkages selected from ether-, oxo-, thio-, amino-, phospho-, silyloxi and also having (4b) one or more additional groups selected from lower alkyl; aryl; aralkyl; alkoxyl; thioalkyl; hydroxyl; amino; nitro; nitroso; cyano; sulfonyl; carbonyl; carboxy; and halo.

21. (Original) The method of claim 12, wherein obtaining the composition having the structure (I) comprises synthesizing the polynucleotide on the substrate.

22. (Withdrawn) The method of claim 12, wherein obtaining the composition having the structure (I) comprises procuring the polynucleotide in solution and contacting the polynucleotide in solution with a functionalized substrate to result in the polynucleotide bound to the substrate via the triaryl methyl linker group.

23. (Original) The method of claim 12, wherein the Cgp' group is a covalent bond linking the polynucleotide and the triaryl methyl linker group.

24. (Original) The method of claim 12, wherein analyzing the polynucleotide comprises directing laser radiation at the matrix material to generate ions including ions derived from the polynucleotide, and analyzing the ions in a mass spectrometer to provide information about the polynucleotide.

25. (Original) The method of claim 12, wherein the substrate is a mass spectrometer sample plate adapted to be disposed in operational relationship to a mass spectrometer to allow matrix assisted laser desorption/ionization analysis of the polynucleotide.